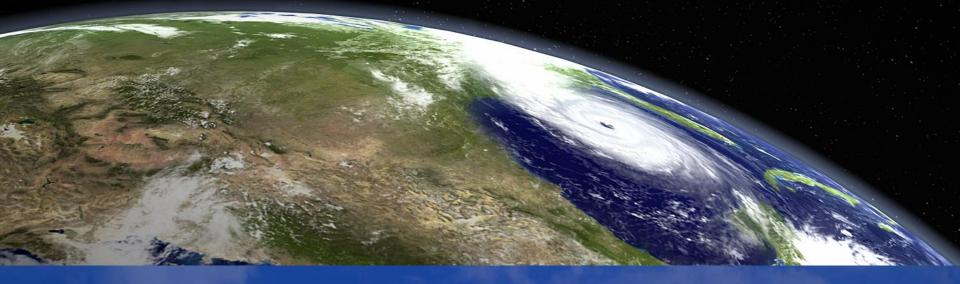




ARPA-E NATURAL GAS WORKSHOP APRIL 22-24, 2013 ROCKY MOUNTAIN INNOSPHERE FORT COLLINS, CO



The Connected Sensor Networks





Innovation & Public/Private Partnerships Across Entire Value Chain





Public-Private Partnership Model Shares Costs Across Many Users

Total Operating Cost

Consumer **Operations & Agriculture / Forest Maintenance Financial** Infrastructure **Energy Investment: Transportation** Rights of Way Instrumentation Int. Government Installation Communications State/Local Gov **Federal** Government **Buys Data**

Government Bears Full Costs

Many Share Costs



COST

Federal Partnership Contract/Activities

National Mesonet Program

- NOAA/National Weather Service
 Total Lightning
- USAF/AFWA
 - Global mission support
- NOAA/NWS/OAR
 - Nowcasting / NWP data assimilation
- MIT/Lincoln Laboratory
 - FAA Aviation Weather Research

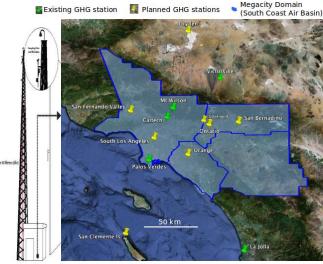
<u>Greenhouse Gases</u>

- INFLUX project
- LA Megacities program
- "Measurement Science for Urban Domes"







































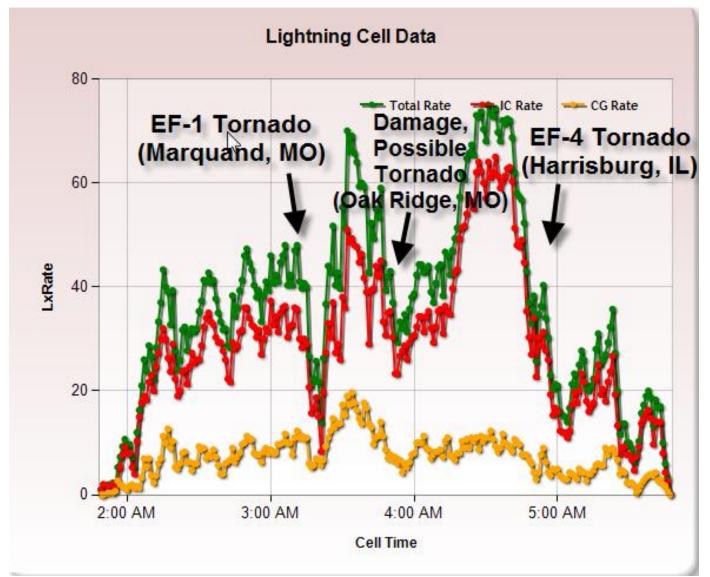




Network of Networks



Total Lightning a Leading Indicator of Svr Wx





Big Data

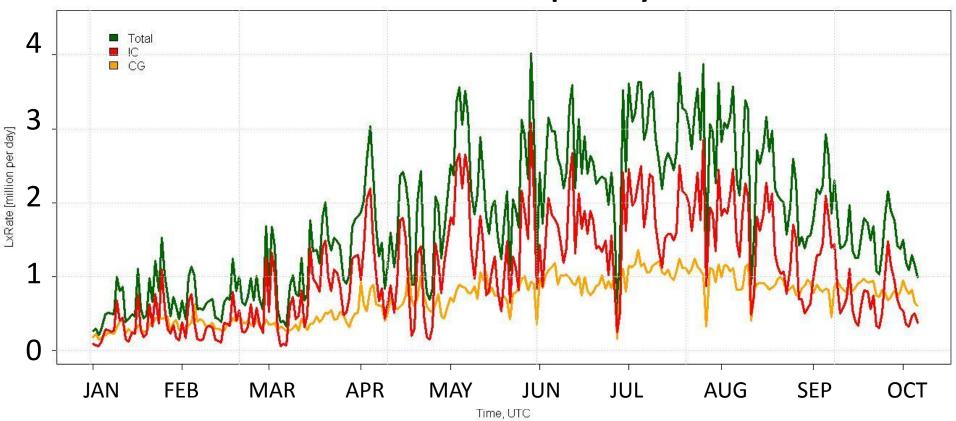


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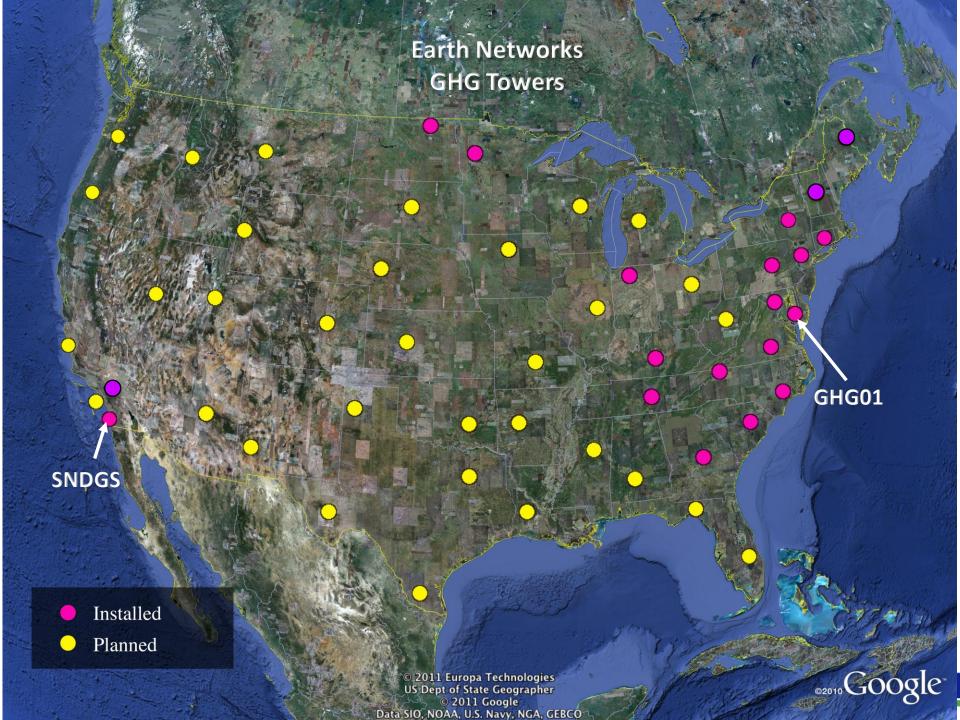


Global Lightning

Millions of Strokes per Day







Sampling System



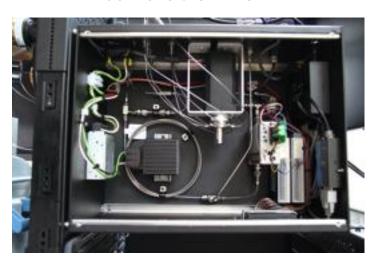
Front View



Side View



"Calibration Box"

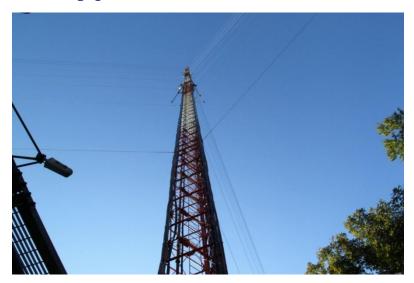


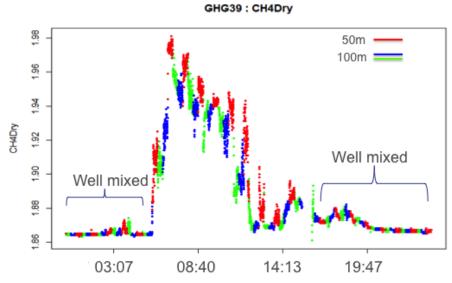






Typical Tower: Lewisburg, Pennsylvania











Our Interests

- Low cost, low maintenance sensors that can be broadly deployed (scalable)
- Highly synergistic with Earth Networks' core capabilities and business strategy
 - Public/Private/Academic Partners
 - Shared Cost Models
- Eager to work with the broader community to make this a reality

